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January 18, 2019

By Hand Delivery
Ms. Lora W. Johnson, CMC, LMMC
Clerk of Council
City Hall - Room 1E09
1300 Perdido Street
New Orleans, LA 70112

Re: Resolution Directing Entergy New Orleans, Inc. to Investigate and Remediate Electric Service Disruptions and Complaints and to Establish Minimum Electric Reliability Performance Standards and Financial Penalty Mechanisms – CNO Docket No. UD-17-04

Dear Ms. Johnson:

Please find enclosed for your further handling an original and three copies of Entergy New Orleans, LLC's ("ENO") 2019 Reliability Plan, which is submitted pursuant to Judge Jeffrey S. Gulin's Order dated November 19, 2018, and is being filed in the above-referenced docket. Please file an original and two copies into the record in the above referenced matter, and return a date-stamped copy to our courier.

Thank you for your assistance with this matter.

Sincerely,

Timothy S. Cragin

TSC\rdm

Enclosures

cc: Official Service List (UD-17-04 *via electronic mail*)

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BEFORE THE

COUNCIL OF THE CITY OF NEW ORLEANS

RESOLUTION DIRECTING ENTERGY NEW ORLEANS, INC. TO INVESTIGATE AND REMEDIATE ELECTRIC SERVICE DISRUPTIONS AND COMPLAINTS AND TO ESTABLISH MINIMUM ELECTRIC RELIABILITY PERFORMANCE STANDARDS AND FINANCIAL PENALTY MECHANISMS	**)))))))))**	**DOCKET NO. UD-17-04**

ENTERGY NEW ORLEANS, LLC'S 2019 RELIABILITY PLAN

Entergy New Orleans, LLC ("ENO" or the "Company") respectfully submits this 2019 Reliability Plan ("2019 Plan") pursuant to the November 19, 2018 Order of Judge Jeffrey S. Gulin. This 2019 Plan includes a section that addresses ENO's plan to improve distribution system reliability (the "Distribution Plan") and a section that addresses ENO's plan to improve transmission line and substation reliability (the "Transmission Plan") in 2019.

I. ENO's 2019 Distribution Reliability Plan

A. Baseline Reliability Programs

ENO's 2019 Distribution Reliability Plan ("Distribution Plan") proposes a variety of programs and corresponding projects intended to improve the reliability of ENO's distribution system (i.e., distribution feeders and related distribution facilities). These projects involve an investment of approximately $15 million in 2019 and approximately $75 million aggregate over the next five years with the goal of providing both immediate reliability benefits and continuously-improving reliability performance. The Distribution Plan set forth herein is intended to take into consideration, and to work in conjunction with, anticipated Grid Modernization projects to provide the most benefit possible to the citizens of New Orleans and to move ENO toward being able to deliver next-generation reliability.

The baseline reliability programs that make up the Distribution Plan are essentially the same as those previously described to the Council in this docket, with one exception. ENO previously included as one of its reliability programs the Backbone Program. The Backbone Program is a proactive reliability program that selects certain backbone feeders each year for inspection up to the first protective device and the completion of reliability projects that result from the inspection of that portion of the selected backbone feeders. ENO has decided to suspend the Backbone Program for 2019 and for the following four years, through 2023, and replace it with another program, described below, for these years. There are two primary reasons that ENO is making this change.

First, as described in the Supplemental Direct Testimony of Tad S. Patella filed on January 10, 2019, in support of ENO's response to the Council's prudence investigation as discussed in Resolution R-18-475, in 2018, ENO created a Fix-It-Now ("FIN") reliability crew, which consists of a four-man reliability crew made up of servicemen from each of ENO's four distribution networks supervised by a 42-year veteran of ENO's distribution system. The FIN crew performs visual and infrared inspections of distribution lines based on known reliability considerations to identify potential vulnerabilities that represent an imminent outage threat and then makes the appropriate repairs necessary to alleviate those vulnerabilities. In addition to the FIN crew, there are three dedicated reliability servicemen ("RSMs") that assist in performing inspections of the distribution system as well as to further investigate the root cause of prior outages that may be contributing to system performance concerns. In the last three quarters of 2018 alone, ENO estimates that the work performed by the FIN crew avoided future customer interruptions in excess of 50,000. Given the success of the FIN crew work in 2018, ENO was already considering the possibility of expanding the FIN crew work in 2019.

The second reason for making the program change was that the Quanta report

recommended that ENO inspect its entire distribution system over the next 5 to 8 years. ENO decided to marry its intent to expand the FIN crew activities in 2019 to Quanta's recommendation to inspect the entire distribution system. Accordingly, ENO has created an 8-year plan to inspect its entire distribution system using the FIN crew to perform the inspections, determine the work needed to make necessary repairs, and schedule the repairs to be performed by contract crews. Because the Backbone Program only inspected the portion of the feeder up to the first protective device and the FIN Inspection Program involves inspecting the entire length of both backbone feeders and lateral feeders, it was determined that the Backbone Program would be suspended for at least the next five years and be replaced by the FIN Inspection Program. Of course, future conditions will continue to change over the course of the Plan, and accordingly, ENO will be reviewing the progress made with this change and will check and adjust throughout this period as necessary based on performance results and other circumstances. This may require changes in priority, solutions or spending allocations to focus where action is needed the most. ENO believes that this change in programs will allow increased focus on repairing distribution system vulnerabilities before they result in outages.

A brief description of each of the baseline reliability programs to be worked in 2019, including the FIN Inspection Program, is provided below including a breakdown of the $15.4 million 2019 reliability budget:

1. FOCUS Program

The FOCUS program represents a systematic approach to identifying devices resulting in repeat outages and addressing all issues on that section of the feeder. It uses outage data over the prior two-year period and a jurisdictional algorithm, as shown below, to identify devices (*e.g.*, breakers, reclosers, line fuses, sectionalizers) and then prioritizes them on a quarterly basis based on the number of customer interruptions per circuit associated with those devices. The intent of

the Program is to improve the reliability performance of FOCUS-identified devices, as well as to improve the overall distribution system by addressing specific outage causes through a focused inspection and mitigation program.

Targeted Device Flagging Algorithm

- Exclude "unavoidable" cause codes
- Exclude BLACK and RED events
- Devices experiencing multiple events in a 24 hour period are only counted once

- The new flagging algorithms based upon:

"number of outages" in "number of days" over a "period of time":

  - 1000 CI's and greater, 3 outages, 18 months
  - 1000 CI's and greater, 4 outages, 2 years
  - 500-999 CI's, 3 outages, 15 months
  - 500-999 CI's, 4 outages, 2 years
  - 200-499 CI's, 3 outages, 12 months
  - 200-499 CI's, 4 outages, 2 years
  - 75-199 CI's, 3 outages, 9 months
  - 75-199 CI's, 4 outages, 2 years
  - 20-74 CI's, 3 outages, 6 months
  - 20-74 CI's, 5 outages, 2 years
  - 1-19 CI's, 3 outages, 4 months
  - 1-19 CI's, 5 outages, 2 years

- Algorithms designed to trigger larger CI devices much faster and allow smaller CI devices **that have significant "quiet" times** the opportunity to NOT trigger a T-Flag.

Once a device is identified, an inspection is performed to identify and capture failing components, deficiencies and issues that are potentially contributing factors to the device's poor performance. These devices are inspected on a point-by-point basis with the findings used to create a remediation plan. The type of work typically performed by this program includes:

- Installation of animal guards and/or protective covers to mitigate animal outages;
- Replacement of defective or damaged equipment such as cross-arms, insulators, conductors, and switches;
- Vegetation mitigation;
- Improvement of Basic Insulation Level ("BIL") by removing bare ground wire located in the primary zone and installing Hendrix insulated grounds

wire where existing shielded construction requires an electrical ground connection; and

- Review and correction as needed of protective device coordination.

For 2019, ENO has budgeted spending $3.0 million to work as many FOCUS-identified devices as possible. To ensure appropriate cost-benefit justification, we are now implementing a stage gate process with cost-benefit review following inspection and design in alignment with the Quanta recommendation. The first and second quarter 2019 devices have already been selected by the algorithm and have been inspected for determination of any repair or remediation work that the circuit needs. Four of these devices have already been designed and are being scheduled for construction. See Exhibit 1 for the first and second quarter list of selected FOCUS devices. The third quarter 2019 devices have also already been selected and inspections are nearing completion and will be sent for design in the coming weeks. A detailed project scope and estimated/actual budget and timelines for each FOCUS project is being developed and will be included with future reports to the Council.

2. Fix-It-Now ("FIN") Inspection Program

Given the success of the FIN crew work performed in 2018 and Quanta's recommendation that ENO's entire distribution grid be inspected on a five to eight year cycle, the 2019 Distribution Reliability Plan will use the FIN Inspection Program to implement a cyclical inspection plan that will ensure that the entire system, including feeders and laterals, is inspected on a regular interval. ENO is committed to implementing that recommendation. We have inventoried the system and developed a plan to perform the initial inspection and repair over an eight-year cycle. ENO is hopeful that after the initial eight-year cycle, it will be able to transition to a five-year cycle for ongoing maintenance.

ENO has been aggressively performing feeder inspections via the Reliability and Storm Hardening programs over the past several years. ENO recently cross-referenced data from multiple reliability programs and identified 42 feeders that were not addressed through any other defined reliability program since 2016. ENO inspected these feeders in 2018 to identify imminent failure (projected failure within six months) and P-1 issues (projected failure between six months and five years), and the findings from these inspections will be worked at the start of 2019. This will mean that 100% of the ENO backbone feeders will have been recently inspected and repaired, thereby providing a fresh start for ENO's new FIN Inspection Program. ENO's intent with aggressively inspecting the feeder backbone is also to help reduce the likelihood of potential disruptions stemming from the part of the feeder that would impact the greatest number of customers.

To determine the order in which the feeders will be inspected and repaired as part of the FIN Inspection Program, the 144 overhead feeders in the ENO system were ranked by customer impact (number of customers affected [weighted 90%] and recent performance [weighted 10%]). The 84 underground feeders will be inspected annually through infrared inspection at the point the feeder comes to a walk-in or switchgear.

Set forth below is the Inspection Schedule that has been developed through 2026:

2019 – Inspect 19 Feeders, 985 line fuses (average of 52 per feeder)

2020 – Inspect 19 feeders, 781 line fuses (average 41 per feeder)

2021 – Inspect 19 feeders, 595 line fuses (average 31 per feeder)

2022 – Inspect 19 feeders, 720 line fuses (average 38 per feeder)

2023 – Inspect 19 feeders, 537 line fuses (average 28 per feeder)

2024 – Inspect 19 feeders, 415 line fuses (average 22 per feeder)

2025 – Inspect 19 feeders, 271 line fuses (average 14 per feeder)

2026 – Inspect 18 feeders, 90 line fuses (average 5 per feeder)

See Exhibit 2 for the schedule of feeders currently identified for inspection from 2019 through 2026. ENO may need to alter the schedule from time to time to adjust for changes in line performance, city growth dynamics, or other circumstances, while working to ensure that all feeders are inspected within the cycle.

The FIN inspections will identify imminent failure (projected failure within six months) and P-1 (projected failure between six months and five years) vulnerabilities on the trunk (i.e., backbone) and laterals of each feeder. For each pole requiring work, the crew will adhere to the ENO's R1 reliability philosophy of bringing all facilities on that pole up to current standards. See Exhibit 3 for a detailed description of the FIN Inspection.

This program will be performed in lieu of the Backbone inspection program as ENO's proactive inspection program for 2019-2023 to ensure 100% inspection of the ENO system. In addition to ensuring the 100% inspection, suspending the Backbone program will complement the Grid Mod and Guild project initiatives by reducing the potential for overlap and rework and allowing ENO to improve reliability for the largest number of New Orleans customers.

3. Pole Program

The Pole Program involves the proactive inspection of the estimated 90,000 poles in New Orleans and identification of poles needing restoration or replacement. The Pole Inspection Program has a 2019 budget of $2.7 million, with $200,000 allocated for inspection, $1.5 million allocated for restoration of poles identified as restorable, and $1 million allocated for replacement of non-restorable poles.

The Pole Program is a cyclical proactive inspection and preventive maintenance program. The program consists of a visual inspection of the complete infrastructure, including the pole, cross-arms, insulators, etc., and a full excavation where possible or sounding and selective boring when full excavation is not possible. The recommended actions depend on the findings of the inspection. Poles judged to be sound received no further action. Those that have been identified as needing additional attention are either treated in the field or reinforced, depending on the condition of the pole. Those that are deemed beyond treatment or reinforcement are prioritized for replacement. ENO's designers are utilizing NESC 205C for replacement of new poles and use of the Pole Foreman software to evaluate the pole class needed for extreme wind speed conditions. Based on poles analyzed so far, Pole Foreman has indicated the need to install more Class 1 poles (as opposed to Class 3 poles) based on the horizontal loading and NESC 250C enhanced wind speed. ENO will attempt to install Class 1 poles where Pole Foreman recommends, however there are instances in which existing foreign utilities in the ground hinder the space needed to install a Class 1 pole. ENO will work to identify all foreign utilities in the ground where a Class 1 pole is to be installed but notes that a Class 3 pole may be installed due to construction constraints.

Under contract with Osmose, ENO has recently performed inspections of 32% of the Entergy-owned poles in the ENO system. The Pole Replacement Program will continue with periodic inspections for 2019 through 2023. In 2019, ENO plans to restore 2,150 Osmose-identified restorable poles to bring those poles up to full performance standards. In addition, we plan to spend $1.0 million replacing poles previously identified as non-restorable. Because pole failures constitute only approximately two to five percent of customer interruptions and ENO desires to improve reliability as quickly as reasonably possible, ENO plans to work the pole

replacement backlog over the 5-year plan and focus its earlier emphasis on other reliability programs that provide more potential for customer interruption avoidance.

4. Distribution Automation ("DA") Program

The DA Program involves fast track installation of DA devices to reap the benefits of increased sectionalization (when outages occur, they will affect fewer customers) in advance of implementation of full grid modernization in an area. More specifically, DA refers to a combination of devices and an integrated communication network that can take automatic action to reduce the impact of a fault on the distribution system. ENO is deploying DA devices as part of the Advanced Metering Infrastructure ("AMI") and Grid Modernization programs. ENO plans to spend a portion of its dedicated reliability spending to accelerate deployment of those parts of DA that will provide immediate reliability improvement. The 2019 Distribution Reliability Plan includes a budget of $2.5 million for the DA Program.

DA can improve reliability through sectionalization which reduces the number of customers affected by a fault by adding protective devices (e.g., reclosers) that respond automatically to isolate a fault. By reducing the number of customers between protective devices, the number of customer interruptions and customer minutes interrupted is reduced. The reclosers that will be installed are fully compatible with the new communication network being installed as part of grid modification. Once the communication network is fully in place, the devices will be able to be controlled from the Distribution Operations Center ("DOC") in Baton Rouge and will be able to report the feeder status to the DOC to help quickly identify and reroute power to minimize the impact of an outage. There are 143 recloser locations across ENO's service territory today.

As part of the initiative to improve reliability performance, ENO is planning to install an additional 50 smart reclosing and sectionalizing devices increasing the total by 35%. Detailed

design and equipment procurement efforts have already begun for the identified project locations. By adding these devices, circuits will be split into smaller segments with fewer customers within each zone. ENO is estimating that customer interruptions avoided will be approximately one quarter of the number of customers on the feeder. It is estimated that the new smart recloser and sectionalization additions will reduce customer interruptions by approximately 9,000 based on historical outage data across the affected circuits.

In 2019, ENO's focus will be on deployment of the communication-capable recloser devices. In 2020, the focus will move to bringing online the full-communication capabilities. A candidate list of sectionalization projects is included as Exhibit 4. These candidates for sectionalization are preliminary and subject to change upon further analysis or changing circumstances.

5. Underground Cable Renewal Program

The Underground Cable Renewal Program involves replacing underground cable to meet performance standards and has a 2019 budget of $450,000.

6. Equipment Inspection Program

The Equipment Inspection Program involves the annual inspection of all capacitor banks, reclosers, and regulators to ensure timely repair of equipment needed to support the grid and has a 2019 budget of $200,000.

7. Internal Program

The Internal Program involves addressing National Electric Safety Code ("NESC") compliance-related projects and Entergy Service Standards compliance-related projects. The 2019 budget for the Internal Program is $500,000.

8. Vegetation Management

Consists of two elements: (1) a cycle-based proactive approach that uses a combination of both conventional side trimming and herbicides; and (2) a reactive, customer-driven component that involves investigating potential problem areas that are identified by Company personnel and/or the public and determining a course of action to alleviate the problem. ENO is currently working a one-and-a-half year trimming cycle. Vegetation Management funding is in addition to the proposed $15.4 million in reliability spending.

B. Grid Modernization

ENO's longer-term reliability plan includes implementing grid modernization projects that specifically target significant decreases in customer interruptions throughout the distribution system. To date, ENO has identified five specific grid modernization projects that are targeted for implementation by January 2022. For details relating to these projects, see page 12 of ENO's Grid Modernization and Smart Cities Report, filed with the Council on April 10, 2018, and the Direct Testimony of Erica Zimmerer filed in the ENO Base Rate Case in September 2018.

C. Quanta Technology, LLC Recommendations

In 2018, ENO retained Quanta Technology, LLC ("Quanta"), national experts in, among other things, electric distribution system reliability, to perform an assessment of our 2018 reliability plan, as well as benchmarking of our reliability practices and performance with select high-performing peer utilities, and to provide recommendations for reliability improvement. Quanta completed its review and written assessment in October 2018 and that report was filed with the Council on October 31, 2018. ENO has been working to incorporate Quanta's recommendations, to the extent currently feasible, into its 2019 Distribution Reliability Plan. A discussion of the Quanta recommendations and the implementation of those recommendations is set forth below.

Recommendation 6.3.1.1: It is recommended that ENO consider using SAIDI, along with SAIFI as part of the metrics used in the benefit-cost analysis for evaluation and prioritization of reliability improvement projects. Consideration of $MAIFI_E$ and $CEMI_n$ is also recommended to the extent these indices can be applied with the currently available data gathering technology.

Response: Emphasis on acceleration of Distribution Automation (DA) was driven in large part due to consideration of reducing customer interruption minutes. DA projects have been prioritized to occur as early in the year as possible to provide customers with maximum benefit to reduce the duration of outages by allowing for stepped restoration and better isolation of issues.

MAIFI is not a metric we are capable of using with our current technology. Once GridMod is fully implemented, MAIFI will be more feasible as a metric to include in the reliability analysis.

Recommendation 6.3.1.2: It is recommended that ENO consider accelerating the implementation of a data analytics program, to the extent possible within regulatory requirements. An analytics program will provide the required data for the implementation of advanced distribution planning applications.

Response: Timing of analytics capabilities associated with the Grid Modernization investments has been incorporated to the current project scope of investments such as AMI and OMS/DMS. Deployment of associated analytics related to these investments is currently aligned with deployment timelines. ENO is currently accelerating deployment of AMI and the communication network as discussed in Council Resolution R-18-224.

In the interim, ENO has improved availability of data to the line supervisors through the introduction of PowerBI software for reporting. This tool allows users to visualize and dive into data with greater ease to allow more data driven decision making.

Recommendation 6.3.1.3: It is recommended to consider estimated customer benefits due to outage cost reduction. As discussed in section 5.4.1, other utilities have included this type of analysis (e.g., using the [Interruption Cost Estimator] ("ICE")) in the benefit-cost evaluation and prioritization of distribution reliability improvement projects/programs, particularly for those that require large investments.

Response: The ICE Calculator is a tool available by Internet designed to estimate the aggregate cost (loss) as seen by the customers due to outages experienced by customers. The calculator uses a preset average value for Electrical rates and customer losses and are State specific (not Utility specific). These values vary based on Residential and Non-Residential classifications and typical metrics that are input by the user of the ICE Calculator. Because the calculator looks at cost to the customer of the outage and residential customer experience very little cost while non-residential customers experience higher costs, the ICE calculator values non-residential customers more than residential customers. While this is true in terms of customer financial loss (i.e. restaurant cannot make sales during outage time, manufacturing companies cannot manufacture products), SAIFI/SAIDI metrics do not place any additional value on customer type. The ENO reliability strategy is to eliminate the outages regardless of customer type. Local management knowledge of the customer type (hospitals, emergency pumping systems, water sources, etc.) are part of the decision making, but are not algorithmically weighted. Since the majority of outages are a mixture of customer types, and since the Reliability Strategy is based on eliminating outage count, the use off the ICE Calculator as a decision factor may inadvertently lower the priority of purely residential customer devices.

Recommendation 6.3.2.1.1: The process for recording outage events needs to be modified to aggregate the multiple restoration events into a single outage. Although this is being pursued as part of the ENO Grid Mod/ADMS project it should be evaluated for a change in the near

future. This will reduce the number of outages reported, will provide the ability for establishing failure rates, and will ensure that when ADMS is implemented that process will be aligned properly.

Response: The new ADMS system will aggregate the multiple outages associated with a higher-level failure (e.g. substation transformer) into one, single outage. The new ADMS will also contain the multiple restoration steps into one record. This new system is scheduled to be in service at the end of 2019. Given that, the investment and work to enhance the current OMS system along with the fact that many of the same employee resources on the ADMS project would be needed to implement the enhancement (impacting the ADMS timeline), it is best to wait until ADMS is available to implement this recommendation.

In the interim, ENO is considering guidance with regards to outage type coding on the separate events created because of stepped restoration. This would improve ENO's trend analysis on outage causes until ADMS can be fully deployed.

Recommendation 6.3.2.1.2: Currently ENO is reporting outage count based on the number of events which includes scheduled outages. With a count in excess of 2,000, that number appears excessive for a utility the size of ENO. The industry norm is to exclude scheduled outages, thus ENO should consider excluding those (or reporting scheduled outages separately) when the overall outage count is provided externally.

Response: Scheduled outages will be excluded from future reliability reporting to align with the industry norm.

Recommendation 6.3.2.2.1: With Current Outage Data - Before both design and construction, some level of prioritization should be pursued. Currently a 70% CI improvement is estimated. Since that value is based on overall Entergy, a value for ENO should be pursued. Once the inspection has been performed and expected enhancements identified, a ballpark cost

should be developed for a benefit/cost (B/C) metric. With that metric, it can be determined if the project is reasonable to be designed. Once designed and a more accurate estimate is determined, then the benefit/cost can also be re-done to ensure the highest B/C value projects move forward.

Response: ENO has revised our selection criteria for FOCUS projects to ensure appropriate cost-benefit justification. ENO has implemented a stage gate process with cost-benefit review following inspection and design in alignment with the Quanta recommendation.

ENO is further considering revising the 70% CI improvement estimate based on recent project performance.

Recommendation 6.3.2.2.2: With Aggregated Outage Data - Once the multiple outage events can be aggregated, analysis can be performed to determine infrastructure failure rates. Including a before and after. These results would provide an enhanced B/C analysis.

Response: The ability to associate failure rates to specific materials and equipment to inform future material and construction standards is included as a requirement in the Entergy Asset Management project to improve overall asset management capabilities at ENO.

Recommendation 6.3.2.3.1: Outage durations should be evaluated for potential enhancements. With the increase in SAIFI, SAIDI has increased by a larger proportion indicating that average outage durations have also increased. A large proportion of the SAIDI impact during an outage often occurs before the crew is on site for repairs. The average duration for the customers impacted can be reduced via sectionalizing devices that expedite partial restorations, as well as outage response from the time the outage began until repairs have been made.

Response: To reduce customer interruption duration, ENO has prioritized the acceleration of Distribution Automation projects in 2019 which will assist in fault location and expediting partial restorations. Aside from restoration efforts, the DOC is also working on new dispatch metrics (using region times to determine the problem areas, a dispatch time of 10 minutes or less,

etc.) that will improve our dispatch times. Additionally, ENO has installed 300 fault indicators at strategic locations to allow the responding personnel to quickly identify and isolate the fault and more quickly restore customers.

Recommendation 6.3.2.4.1: It is recommended that ENO evaluate the additional implementation of distribution automation schemes (FLISR) to complement ENO's grid modernization program and reduce the system average amount of customers within each switching/protection zone to 500 customers. This is an industry leading practice that is gradually being adopted by other utilities.

Response: This will be considered in conjunction with the full implementation of the DA program in connection with Grid Modernization.

Recommendation 6.3.2.4.2: It is recommended that ENO explore the implementation of advanced reclosing solutions that are available in modern microprocessor-based reclosers (e.g., single-phase reclosing/tripping and lockout).

Response: The DA team has included coordination with Entergy Distribution Design Basis on the strategy and selection of specific equipment and material requirements and selection. The team is aware of these benefits and it is being considered in their equipment selection.

Recommendation 6.3.2.4.3: It is recommended that ENO consider accelerating, to the extent possible within regulatory requirements, the implementation of its grid modernization, AMI and ADMS programs, which will provide some of the foundational and intelligent infrastructure and systems (e.g., FLISR schemes) needed to improve distribution reliability, including the ability to automate outage data collection and analysis.

Response: ENO has established an accelerated plan to deploy the foundational technologies of AMI and the communication network. In the September 2018 ENO Rate Case, ENO has detailed the approach to deploy additional Grid Modernization investments.

Recommendation 6.3.2.5.1: ENO should pursue a corrective maintenance program that is based on a 100% inspection of the entire distribution system within an identified cycle, such as every 5-8 years. This would be similar to an expansion of the Backbone program in that the effort is to identify and fix specific problems and not perform an extensive rebuild. For example, if a broken crossarm or excessive leaning pole is identified, that needs to be fixed soon. As part of this effort, an overall standard practice should be developed specifying the requirements. Elements of a system inspection currently exist in the reliability programs currently underway at ENO. Full distribution inspection programs are not common practice in the industry, however, the current efforts by ENO offer a good start toward such an effort.

Response: The FIN Inspection program described above was designed to implement this recommendation.

Recommendation 6.3.2.6: An overall evaluation of the current ENO vegetation program should be performed to review current trim cycles, clearance requirements, trimming obstacles, and the different types of vegetation outages. ENO currently operates with highly restrictive vegetation practices within the City and deeper evaluation of the impact of those restrictions is warranted. That information can then be used to determine the need for improvements in the program and whether regulatory support will be required.

Response: ENO has previously discussed increasing the trim clearance distance from the current four feet to eight feet from primary conductor following Hurricane Isaac in 2012, but the City was not open to drastically altering the urban canopy based upon worse case hurricane

scenarios. ENO remains open to exploring whether trim clearances in the City can be increased to improve reliability.

Recommendation 6.3.2.7: An evaluation of the transmission reliability should be performed combined with a plan to improve the transmission reliability.

Response: A transmission reliability plan has been developed and included.

Recommendation 6.3.2.8: An Internal Audit Program should be pursued to ensure current and new processes are effectively pursued and implemented. The level of an internal audit can vary but should ensure that committed requirements are being followed. As a first step, requirements should be documented. Examples of validation audits are: a. Outage data, b. Prioritization process, c. Corrective maintenance program, d. Tree Trim clearance, e. Pole Inspections.

Response: Internal Audit Services' ("IAS") efforts are based on a risk assessment of Entergy and this risk assessment has determined that one of our areas of focus should be on the changes in the utility processes, like the Grid Modernization projects. As a result, IAS is providing consulting services on the Grid Modernization projects, specifically, AMI, EAM, OMS/DMS, Customer Digital and Distribution Automation. The objective of the consulting projects is to ensure that risks are identified, and adequate controls are developed to mitigate the risks for both business processes and Information Technology General Controls, which includes system security. For the business processes, IAS is reviewing the Standard Operating Procedures ("SOPs") for each process to ensure that risks are identified, and adequate controls are developed to address the risks. IAS is also reviewing the Cyber Security Plans to ensure that appropriate security controls/measures are implemented to mitigate any cyber security risks. After each system is implemented, IAS will perform a post-implementation review to ensure that

the new processes and systems are adequately controlled and that the controls identified in the consulting projects were implemented.

D. Overview of 2018 Reliability Plan Performance

The reliability performance for 2018 is discussed in detail in ENO's response to the Council's prudence investigation filed on January 10, 2019, however, a brief synopsis is provided here.

In 2018, ENO made promising gains in distribution line reliability that can be attributed to focused efforts and investments through its storm hardening and reliability programs. Preliminary 2018 numbers indicate an approximate 20% decline in distribution line customer interruptions compared to 2017 customer interruptions. Although these distribution line improvements were offset somewhat in 2018 by a challenging year for transmission-related customer interruptions (also discussed more fully in ENO's Response to the prudence investigation), it is clear the work being done by our motivated distribution reliability team is showing progress.

In 2018, we planned 23 FOCUS projects and 9 Backbone projects. As of January 17, 2018, five of those 2018 projects remain open due to Mississippi River level preventing excavation work near the levee and rescheduling of required customer outages due to cold weather and customer needs. These will be completed as soon as river level and customer schedules allow.

In addition to the FOCUS and Backbone program work, the FIN crew implemented in 2018 performed proactive inspections that prevented customer outages and provided support for investigating the cause of repeat outages and fixing the issue to prevent recurrence. The work performed by the FIN team is estimated to have helped in avoiding over 50,000 future customer interruptions.

II. ENO's 2019 Transmission Reliability Plan

As previously reported by the Company, the utility industry as a whole is undergoing a period of tremendous change. From a transmission perspective, that change is evident at various levels. At a macro level, the Company's participation in the MISO RTO has changed the manner in which the transmission system is planned. While ENO is still responsible for local planning, commonly referred to as "bottom-up planning", other aspects of planning – "top down planning", generation interconnection studies, and transmission service studies – are performed by MISO. From a generation market perspective, ENO's generation is dispatched along with other participating generation in MISO's market.

Technological advances affect all aspects of the power supply chain – generation, transmission, and distribution including end-use customers. Changes in each of these areas will have a ripple effect on the others. Consequently, the transmission system will likely require upgrades and new transmission construction to reliably deliver electricity to customers in the years to come.

As discussed in the Direct Testimony of William L. Sones, the reliability performance of ENO's transmission system will vary from year to year. Historical data demonstrates that reliability performance has been fairly consistent second quartile performance as compared with peers in the Southeastern Electric Exchange (SEE) benchmarking efforts. It also demonstrates that transmission reliability metrics may continue to experience some volatility from year-to-year given existing legacy system configuration challenges and the difficulty associated with controlling or eliminating certain initiating events. To address the performance, and specifically the 2018 increase in transmission-related outages, ENO has undertaken a number of actions that include (1) reviewing and updating the assets that are candidates for renewal, (2) began executing the current reliability plan, which implements $47 million of infrastructure reliability

improvements over five years (2019-2023), (3) adding transmission-voltage circuit breakers at key substations to reduce customer exposure (system configuration projects), (4) increasing maintenance activities over recent months, (5) evaluating additional technologies that may lead to proactive identification of impending equipment problems, and (6) initiating actions to eliminate identified human performance traps.

A. Future Increase in Infrastructure Reliability Plan Spending

As described by Mr. Sones, ENO uses two primary processes associated with maintaining and improving transmission system reliability. The first process involves installing new infrastructure and/or upgrading existing infrastructure to maintain a reliable and robust system capable of serving existing and new customers under anticipated conditions. This is achieved through ENO's compliance with mandatory NERC reliability standards applicable to all transmission systems in North America. This process of identifying and building transmission facilities to meet NERC reliability standards and to maintain transmission system reliability is referred to herein as Transmission System Planning. There is one project, currently under construction and expected to be placed in service in 2019, that resulted from this planning process. The project involves the reconductoring of the Paterson to Pontchartrain Park 115kV transmission line.

The second process is generally referred to as asset management and is meant to ensure that existing transmission facilities perform as designed. Recognizing that even properly designed and maintained facilities can fail to perform as designed, ENO seeks to reasonably minimize such occurrences and their impact, largely guided by the Company's knowledge and assessment of the system assets and the impacts upon it from external sources. This aspect of maintaining reliability is referred to herein as Infrastructure Reliability Planning and consists of maintaining assets as well as the programmatic replacement of assets. The combination of

Transmission System Planning and Infrastructure Reliability Planning is important in building and maintaining a reliable transmission system.

Infrastructure Reliability Planning is informed by the evaluation of transmission-related outages and their causes. Based on ENO's evaluation of recent transmission-related outages, the causes of the outages can be grouped into three broad categories: asset condition, system configuration, and human performance. All three areas are described in detail below.

The table below summarizes ENO's historical and forecasted spending for various asset renewal programs and transmission system configuration projects. This illustrates an increase in annual reliability spending when compared to historical reliability spending.

Historical and Forecasted
Transmission Infrastructure Reliability Capital Spending
(2014-2023)
($millions)

Spending Category	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**
Substation – Distribution Equipment	1.4	3.2	3.8	3.6	3.9	4.1	4.5	2.9	3.0	3.0
Substation – Transmission Equipment	1.3	0.6	1.9	0.2	1.5	2.0	2.2	2.3	2.4	2.1
Transmission Line	0.3	1.0	0.1	4.2	0.4	1.3	1.0	1.0	1.1	1.1
Transmission System Configuration	0	0	0	0	0	3.7	5.5	0.0	3.6	0.0
Other	0.2	0.1	0.0	-0.1	0.0	-0.06	-0.01	-0.01	0.0	0.0
TOTAL	3.2	4.8	5.8	7.9	5.7	11.04	13.19	6.19	10.1	6.2

Note: Amounts may not tie due to rounding.

In addition, ENO conducts day-to-day routine maintenance and outage restoration activities, commonly referred to as operations and maintenance (O&M). The table below summarizes ENO's historical and forecasted O&M spending.

Historical and Forecasted
Transmission Asset Management O&M Spending
(2014-2023)
($ millions)

Spending Category	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Transmission Asset Management O&M	1.26	1.48	1.44	1.41	1.65	1.64	1.63	1.62	1.62	1.62

ENO is continuing to evaluate additional funding needs for asset renewal programs and system configuration projects to achieve sustained levels of improved reliability. ENO intends to come back to the Council with additional information for each of the broad areas of infrastructure improvements described in this filing when future plans are more fully developed. After funding is approved for programs and projects, ENO will need to ensure that it has, or can secure, the people and other resources needed to execute the reliability plan. The practical result of these considerations is that the work will need to be performed over a reasonable timeframe and not all at once. Therefore, it is necessary to have a methodology in place that best prioritizes the portfolio of identified projects.

To accomplish this project prioritization, ENO uses a risk score methodology. This methodology is used to rank assets within asset classes, such as transformers, protection systems, breakers, or transmission lines, for prioritization purposes, and is described in more detail further on. Furthermore, to complete the planned projects, significant coordination between the Transmission organization and other involved entities is of paramount importance.

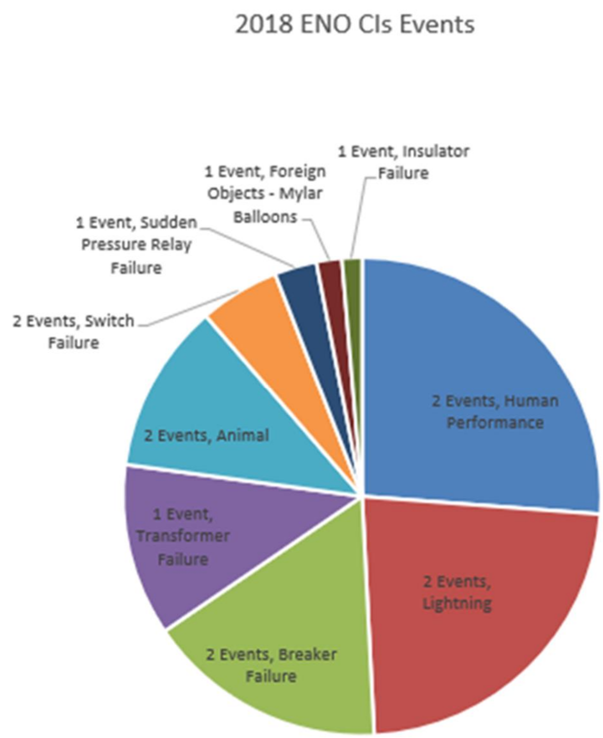
While not part of Infrastructure Reliability Planning, ENO has also undertaken a number of actions to eliminate identified human performance traps that have sometimes led to transmission-related outages, as described below.

B. Evaluation of the Causes of Transmission / Substation-Related Outages

For the period 2014 through 2018, there were 52 events originating from the ENO transmission system that led to customer interruptions. In evaluating these 52 events, it was determined that they can be classified into three major categories. Including their contribution to the total customer interruptions over the 2014 through 2018 period, these categories are: asset condition (70%), system configuration (19%), and human performance (11%). Asset condition refers to events caused by equipment failure or animals making contact with energized components resulting in customer interruptions. System configuration refers to events that impact customers due to the vulnerabilities in the configuration of the transmission system. Although outages are not initiated by system configuration challenges themselves, these events would otherwise likely not result in a customer impact if the system configuration vulnerabilities did not exist. Human performance is any event that is initiated due to human action(s) including, but not limited to, switching error, relay setting error, and/or design error. These types of events are often the result of a lack of effective controls or failed barriers that would have prevented the event from occurring. For 2018, the three major categories contributing to customer interruptions are as follows:

- Asset condition: 39% (7 events)
- System configuration: 30% (5 events)
- Human performance: 31% (2 events)

The chart below provides the detailed event cause classifications and the number of events attributed to them for 2018.



The table and summary below provide additional details for each of the 14 transmission-related outages in 2018 along with the immediate actions undertaken to remediate the customer impact.

Date	Substation / Transmission Line	Resulting Customer Interruptions	Event Classification
1/17/18	Napoleon	1,530	Equipment Failure
2/21/18	Bienville	895	Equipment Failure
5/15/18	Napoleon	19,100	Human Performance
5/24/18	Southport	3,232	Equipment Failure
6/10/18	Derbigny – Michoud	4,741	Lightning
7/3/18	Napoleon	10,530	Human Performance
7/22/18	Notre Dame	1,944	Foreign Objects
8/16/18	Almonaster - Michoud	21,291	Lightning
8/24/18	Curran	5,583	Animal
8/27/18	Derbigny	1,407	Equipment Failure
9/17/18	Derbigny	7,454	Animal
9/30/18	Tricou	4,728	Equipment Failure
10/21/18	Pauger	17,541	Equipment Failure
10/30/18	Almonaster	13,182	Equipment Failure

A summary of the event descriptions and remediating actions is provided below.

1. January 17, 2018 -- Event at Napoleon Substation resulting in 1,530 customer interruptions lasting six minutes. The event was the result of a substation insulator failure during extreme cold and icing conditions.

2. February 21, 2018 -- Event at Delta Substation resulting in 895 customer interruptions lasting two hours. The event was initiated by distribution line fault causing a fire on an exit cable. The feeder breaker failed to trip, causing a bus outage. The feeder breaker has been replaced.

3. May 15, 2018 -- Event at Napoleon Substation resulting in 19,100 customer interruptions lasting 35 minutes. The event occurred while work was being performed that required a transformer to be taken out of service. With one transformer being out of service and given higher than normal temperatures that day, an overcurrent situation began occurring on the other transformer and an operator at the Distribution Operations Center did not timely react to the over-current alarm to prevent the working transformer from overloading and tripping offline.

4. May 24, 2018 -- Event at Southport Substation resulting in 3,232 customer interruptions lasting two hours. The event was initiated by the inadvertent tripping of a sudden pressure relay. The inadvertent trip is believed to have been caused by inclement weather in the area. Two sudden pressure and associated seal-in relays have been replaced with upgraded units.

5. June 10, 2018 -- Event on the Derbigny to Michoud line resulting in 4,741 customer interruptions lasting 43 minutes. The event was initiated by a lightning strike on the transmission line. Operators were unable to sectionalize the line to

reduce the impact to customers due to an inoperable Remote Terminal Unit (RTU).

6. July 3, 2018 -- Event at Napoleon Substation resulting in 10,530 customer interruptions lasting two hours. During construction, a design error led to incorrect wiring of a linear coupler which ultimately caused this event. The wiring error has been corrected.

7. July 22, 2018 -- Event at Notre Dame Substation resulting in 1,944 customer interruptions lasting 90 minutes. The event was initiated by balloons getting into the substation bus.

8. August 16, 2018 -- Event on the Almonaster to Michoud line resulting in 21,291 customer interruptions lasting 10 minutes. The event was initiated by a lightning strike on the transmission line. Resulting damage to transmission equipment has been repaired.

9. August 24, 2018 -- Event at Curran Substation resulting in 5,583 customer interruptions lasting 80 minutes. The event was initiated by a bird defeating the animal mitigation equipment installed on one of the substation transformers. The animal mitigation equipment has been replaced.

10. August 27, 2018 -- Event at Derbigny Substation resulting in 1,407 customer interruptions lasting 11 minutes. The event was initiated by a transmission switch failure. The failed switch has been replaced.

11. September 17, 2018 -- Event at Derbigny Substation resulting in 7,454 customer interruptions lasting 86 minutes. The event was initiated by a cat entering the substation, climbing higher than the mitigation equipment, and gaining access to unmitigated equipment. A high security fence that will prevent walking/crawling

animals from entering the substation is currently in construction. A project is planned to add animal mitigation equipment to previously unmitigated components.

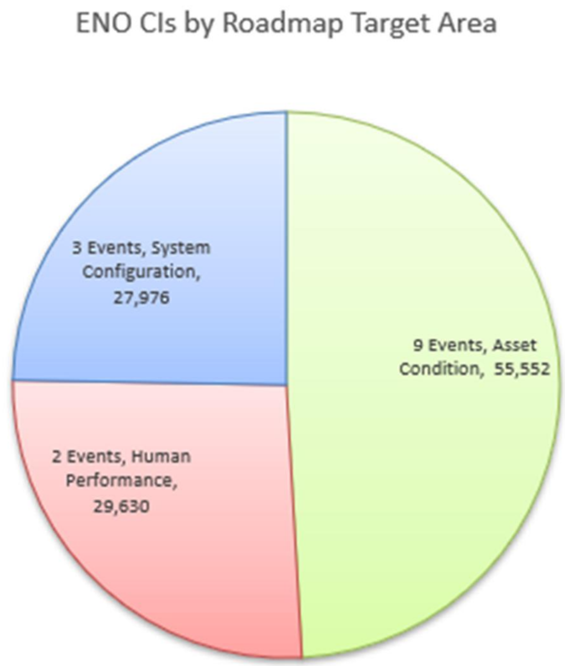
12. September 30, 2018 -- Event at Tricou Substation resulting in 4,728 customer interruptions lasting 93 minutes. The event was initiated by a distribution switch failure. The failed switch has been replaced.

13. October 21, 2018 -- Event at Pauger Substation resulting in 17,541 customer interruptions lasting three hours. The event was initiated by a distribution circuit breaker failure. The failed breaker has been replaced.

14. October 30, 2018 -- Event at Almonaster Substation resulting in 13,182 customer interruptions lasting 26 minutes. The event was initiated by a transformer failure, which is being replaced with a strategic spare transformer.

In 2018, seven customer interruption events were the result of failed equipment. Five customer interruption events were due to animal contacts with energized equipment, lightning strikes, and public interference. Several of these events would typically only result in a momentary operation; however, due to system configuration vulnerabilities in New Orleans some of these events resulted in sustained outages. Two customer interruption events were attributed to human performance. Just under 50% of these transmission-related customer interruptions lasted 35 minutes or less, and approximately 20% lasted 10 minutes or less.

The detailed causes of the outage events can be grouped into three broad categories (asset condition, system configuration, and human performance) depicted in the chart below. These categories are the target areas for ENO's planned roadmap to reduce customer interruptions.



C. Transmission Asset Condition and Its Impact on Outages

As noted above, asset condition refers to a number of areas that include equipment failure and animal mitigation. Equipment failure rate depends on the type of equipment, asset condition, age, and various external factors. The types of transmission system equipment include surge arresters, switches, circuit breakers, transformers, poles/structures, crossarms, and insulators. Depending on its function and the type of events the asset is exposed to, some equipment is stressed more than others. Due to its nature and use, circuit breakers and switches will undergo more active use as they are either manually or automatically operated to maintain system reliability during normal and abnormal system conditions. With respect to the condition of assets, their probability of failure will naturally increase over time as equipment degrades. External factors include, for example, lighting exposure, animals contacting energized equipment, public interferences.

D. Transmission System Configuration and Its Impact on Outages

While many of ENO's substations are configured with transmission-voltage circuit breakers, some are not. A substation protected by transmission-voltage circuit breakers will have a higher degree of reliability (and also higher cost) than a substation that does not have transmission-voltage breakers. Current design standards typically include transmission-voltage circuit breakers; however, that was not the case when some of these facilities were designed and constructed decades ago.

The protection system of ENO's transmission facilities is designed such that certain elements must be taken out of service to maintain the integrity and reliability of the rest of the ENO grid. For example, if a lightning strike were to occur on a transmission line segment from substation A to substation B, the protection system is designed to remove from service that line segment impacted by the fault. Consequently, any intermediate substation(s) served from that line (between circuit breakers), and without transmission-voltage circuit breakers will also be automatically removed from service. In doing so, the protection system ensures that the remainder of ENO's transmission system remains intact, and the non-affected customers remain in-service. This is similar to how residential circuit breakers operate to isolate only those circuits affected by a fault.

Another example of configuration vulnerability is the design of the substations themselves. There are various substation bus configurations and differing attributes for each. For example, a substation that is configured as a "ring bus" will inherently be more reliable than a substation with a "single bus" configuration due to the installation of multiple transmission-voltage circuit breakers that remove fewer elements from service during an event. However, a ring bus substation will have a higher cost to build, and a higher cost to maintain, than a single bus substation due to the requirement to have more substation equipment and circuit breakers

than a single bus substation. While a single bus configuration provides lower customer reliability as compared with other configurations, the positive attributes of a single bus configuration include: lower, smaller land area, relative simplicity for the application of protective relaying, fewer maintenance needs. For ENO, the predominant substation configuration for ENO's existing substations is a single bus configuration.

E. Human Performance Traps and Its Impact on Outages

Transmission system outages may be attributed to human performance when they result in sustained outages that are initiated or extended by human action or inaction including, but not limited to, switching errors, relay setting errors, and design errors. For example, a relay is part of the automatic protection system for electrical equipment. The settings on relays determine the boundaries for when a circuit breaker will react to unplanned system disturbances. If a setting is incorrect, the circuit breaker may not operate when called upon or operate when not required. To increase awareness of human performance traps and their impact on the operation of the Company's transmission system, ENO mitigates these factors though measures such as training, review of procedures, contractor oversight, and a settings/design quality management plan.

F. ENO's Technical and Engineering Approach to the Remediation of Transmission-Related Reliability Issues and Identification of Priority Projects

ENO's current reliability-focused capital investment plan revolves around reducing the number of outages, and impacts of outages, based on two of the three main categories discussed previously: asset condition and system configuration. This plan includes increased spending in 2019 and 2020 to complete additional projects that will address system configuration challenges, as well as asset renewal work that is continuing to increase over the next several years. The plan is expected to address needs across New Orleans that will continue to support improved reliability. However, as described in the testimony of Mr. Sones, the transmission system may

continue to be susceptible to performance volatility due to the extent of assets identified for replacement and the amount of legacy configuration vulnerabilities that exist.

This plan includes a review of all ENO substations to identify all components that would qualify for replacement under an existing asset renewal program. It also identifies the system configuration vulnerabilities that would need to be addressed in order to bring the system to a level commensurate with current Entergy Transmission design standards. These items are prioritized and identified in the plan for execution.

Certain budget decisions, such as the prioritization of projects and activities within Asset Renewal Programs, are based on a risk score methodology. This methodology is used to rank assets within asset classes, such as transformers, protection systems, breakers, or transmission lines, for prioritization purposes. Risk scores are the product of probability of failure (asset health) and consequences. Each major asset class has its own criteria for health and consequences. Health typically involves criteria such as age, history, and inspection or diagnostic test results. Consequences typically include factors such as customer electricity demand, availability, customer counts, and costs.

Once the risk scores are determined, project optimization begins. Optimization involves the coordination of resources (internal and external), planned outages (including MISO approvals of outages), and bundling of projects driven by other programs. Bundling of projects is a factor due to potentially significant efficiency gains. Bundling can reduce mobilization, demobilization, engineering, switching, planning, contracting, and administrative costs thus allowing for more assets to be replaced in a shorter time span. Specifically, with respect to oil-filled equipment, environmental risk is also a factor that is considered in to the replacement prioritization decision.

1. Asset Renewal

The transmission line and substation programs in place to address asset condition are as follows:

- Circuit Breaker Replacement
- Transformer Replacement and/or Life Extension
- Animal Mitigation Installation
- Circuit Switcher Replacement
- Surge Arrester Replacement
- Switch Replacement
- Instrument Transformer Replacement
- Remote Terminal Unit (RTU) Replacement
- Relay Improvement
- Transmission Line and Substation Insulator Replacement
- Wood Pole Replacement
- Crossarm Replacement
- Shield Wire Replacement

2. Addressing Transmission System Configuration Vulnerabilities

The programs in place to address system configuration are as follows:

- Circuit Breaker Addition
- Substation Reconfiguration

In addition to these programs, additional projects underway include the following:

- Claiborne Substation: ENO is installing a third transformer at Claiborne Substation, followed by replacement of an existing transformer which has been identified as being near end-of-life. This project is expected to

reduce customer exposure and prevent likely outages from occurring. The work is expected to be completed by the second quarter of 2020.

- Critical Spare Equipment Inventory: ENO is purchasing two spare power transformers to provide enhanced capabilities to respond to failures and restore to normal system operations more quickly. The first spare is expected to be delivered by the third quarter of 2019, with the second spare expected by the first quarter of 2020.
- Several transmission-voltage circuit breaker additions have been identified in the current plan to reduce system configuration vulnerabilities at Curran, Lower Coast, and Napoleon substations. These installations are anticipated to be completed by the year shown below.
    - Curran Substation: 2020
    - Lower Coast Substation: 2020
    - Napoleon Substation: 2022
- Derbigny Substation: ENO is currently installing a high security fence at Derbigny Substation to prevent entry by non-qualified individuals that could cause equipment issues and outages, as well as reduce the probability of animals gaining access to the substation and initiating an outage. This work is expected to be completed by March 2019.

3. Maintenance Plan

ENO's substation maintenance plan consists of performing routinely planned tasks to ensure assets are functioning as desired and that problems with equipment are identified and addressed prior to equipment contributing to an event. Maintenance falls into the following categories: preventative maintenance ("PM"), diagnostic maintenance ("DM"), inspection

maintenance ("IM") and corrective maintenance tasks ("CM"). PM, DM, and IM work are tasks that are planned and scheduled based on time frequency or when certain asset conditions trigger a task. CM activities are performed when a deficiency is identified that needs to be corrected for proper operation of the asset. Once a CM is identified the work is also scheduled and performed. All maintenance tasks are prioritized in to high, medium, and low priorities. ENO's forecasted substation maintenance budget for 2019 is approximately $963,000. This work will consist of over 1,000 PM/DM/IM type tasks and anticipates approximately 100 CM tasks to be performed. These tasks generally include high and medium priority work. Low priority work is bundled with other tasks as it makes economic sense in order to complete this work that may be in the same substation or outage zone.

In addition to substation maintenance, ENO performs annual maintenance to address vegetation issues that could lead to outages caused by vegetation coming into contact with transmission lines. These activities include routine patrols, tree trimming, removing dead, dying, and damaged trees in danger of contacting lines, maintaining the right-of-way floor to prevent vegetation encroaching from the base of the corridor and vegetation control within the perimeter of the substations. ENO's forecasted transmission vegetation management budget for 2019 is approximately $362,000.

4. Human Performance

The Transmission Asset Management Department includes a Training group that provides formal training to transmission employees and contractors involved in various facets of operating and maintaining the ENO transmission system in a safe and reliable manner. The training programs that address human performance issues include: transmission equipment switching, human performance analysis, and job hazard analysis.

The Company has undertaken a number of actions to eliminate identified human performance traps, as described below.

- Revised Switching Procedure and Training: During initial switching training and certification, Human Performance concepts are introduced in section 1 of the lesson plan with the concepts of the hierarchy of barriers, human performance tools and human performance traps. These concepts continue to be reinforced throughout the classroom training and during the field exercises and scenarios conducted in the Entergy System's training substation. Other switching specific tools to reduce human error are also introduced such as marking up oneline diagrams and "tell-touch-tell". A trainee is granted certification and their information is entered into the switching database after completion of the following:

    1. 120-day period of mentoring and field observation of switching activities;
    2. Successful completion of a written and practical exam to demonstrate their ability to write switching orders and clearances after the 120-day period;
    3. Successful completion of an assigned a syllabus that outlines the switching tasks that the employee must demonstrate proficiency on through observed on-the-job training; and
    4. Documentation with all appropriate signatures for the completion of the syllabus is returned to the training group.

- Switchman Proficiency Program: In 2018, the Transmission Organization introduced (i) the Switching Refresher course, which is required to perform switching, and (ii) general human performance training to combat switching errors. The course involved a review of switching errors and use of various human

performance tools, including: use and proper completion of the pre-switching checklist, utilizing and marking up oneline diagrams, job hazard analysis (JHA) documentation, configuration management, critical steps, and place-keeping using the circle-slash method. A future switching refresher training course will be more focused on the performance gaps identified through the analysis of switching errors.

- New Mandated Human Performance Training: In 2019, all field personnel will also receive eight hours of Enhanced Human Performance Training. This training will be conducted by a third-party vendor and consist of (i) classroom training, (ii) small group activities, and (iii) review of scenarios on the following topics: human performance tools and traps, human performance principles, latent organizational weaknesses, normalized deviation, giving and receiving feedback, and identifying and addressing undesired behaviors both up and down.
- Job Hazard Analysis (JHA) Training: During the "boot camps" for substation mechanics and relay technicians, the training group conducts job hazard analysis workshops to introduce the concept of JHA to the field personnel and the proper use and documentation of JHAs. This is performed in a classroom environment followed up by practical exercises. JHA is used to identify hazards that could lead to a safety or reliability event, and identifies mitigating actions that can be put in place to reduce the potential of the hazard initiating an event.

When events and near misses occur, company personnel perform a cause analysis to identify the underlying issues that led to the event. Additionally, this effort establishes corrective actions to address the identified issues and prevent similar events from occurring in the future. This process contributes to a culture of continuous improvement and organizational learning

from past events to improve future performance. Other examples of initiatives that have been developed to address human performance challenges for employees and contractors include the following:

- Field Execution Oversight
- Relay Settings and Engineering Design Quality Management Plan
- Commissioning Procedures
- Risk Review Process

5. Project Execution and Outage Coordination

For the Transmission Organization to be able to complete the projects discussed herein and more extensive projects being considered, planned outages will need to be scheduled. These transmission outages, particularly those that require longer outages or that are more regional in nature, must be coordinated in a way that does not create an unacceptable risk to grid stability. The inability to take planned outages could delay certain projects if system conditions are overly constrained. It should be noted that one benefit of the proposed New Orleans Power Station is that it can provide increased optionality in outage scheduling and will help to ensure and support system reliability. Additionally, there will need to be a very significant level of coordination between the Transmission Organization and all of the other entities that may be associated with the projects, including, without limitation, ENO's distribution organization (i.e., engineering, planning, operations, customer service, etc.), the customers, MISO, and Entergy's power generation organization. This coordination, along with the sequencing of planned outages, is of paramount importance to ensure that the projects can be completed safely, efficiently, and with the least amount of risk for creating additional extensive outages.

For example, the distribution system may require modifications (e.g., building additional distribution circuits) to move customers around to be served from alternate points of delivery

while a substation outage is undertaken to perform the required projects. Customers normally served from multiple transmission sources may be limited to a single source furthering their exposure to outages. MISO will need to review and approve planned transmission outages. Power generation will need to review the local generation commitment and dispatch to support the planned transmission outages. Furthermore, planned outages are still subject to cancellation by MISO if system conditions are warranted. During this period of planned outages, some customers will be subject to an increased exposure to service disruptions.

G. Budget and Timeline for Project Completion

Based on current approved spending, ENO's total transmission Infrastructure Reliability Plan spending for 2019 through 2023 is approximately $47 million. ENO is currently evaluating additional funding needs for asset renewal programs and system configuration projects to achieve sustained levels of improved reliability and intends to come back to the Council with additional information when those plans are more fully developed. As noted above, once funding for programs and projects is secured, ENO must then assure that it has, or can secure, the necessary people and other resources required to execute the reliability plan. Additionally, as discussed above, it is imperative that planned outages be coordinated and sequenced to ensure system stability and to minimize additional outage exposure. The practical result of these considerations requires that the work be performed over a reasonable timeframe, and not all at once.

The Transmission Organization does not develop its budget by asset renewal program. That is, it does not dedicate a certain sum of dollars to a specific program. Rather, an amount is budgeted to achieve an overall objective with respect to a facility, and various programs are undertaken that serve that objective. In addition, due to the inherently fluid nature of the project work being performed (e.g., the ability to take transmission outages may require a change in

priorities during the year) Transmission typically budgets its reliability programs on an annual basis, with adjustments during the year as circumstances warrant.

The table below details how the currently approved budget is expected to be allocated by transmission asset management spending category for the 2019 through 2023 time period. Note that the first three line items below (Substation – Distribution Equipment, Substation – Transmission Equipment, and Transmission Line) account for asset renewal projects based on the specific programs outlined above.

Forecasted Transmission Infrastructure Reliability Capital Spending
(2019-2023)

Recurring Transmission Asset Management Spending ($ millions)					
Category	2019E	2020E	2021E	2022E	2023E
Substation – Distribution Equipment	4.1	4.5	2.9	3.0	3.0
Substation – Transmission Equipment	2.0	2.2	2.3	2.4	2.1
Transmission Line	1.3	1.0	1.0	1.1	1.1
Transmission System Configuration	3.7	5.5	0.0	3.6	0.0
Other	-0.06	-0.01	-0.01	0.0	0.0
TOTAL	11.04	13.19	6.19	10.1	6.2

Note: Amounts may not tie due to rounding.

- Substation – Distribution Equipment: Includes asset management investments for the *distribution voltage* portion of substations, which includes assets operating at a distribution voltage and inclusive of power transformers (e.g., 115kV/13.8kV power transformers, 13.8 kV feeder breakers and switches inside a substation).
- Substation – Transmission Equipment: Includes asset management investments for the *transmission voltage* portion of substations, which includes assets operating at a transmission voltage (e.g., 115kV circuit breakers, 230/115kV autotransformers).

- Transmission Line: Includes asset management investments for transmission line assets operating at voltages of 69kV and higher (e.g., 115kV and 230kV transmission lines, structures, and towers).
- Transmission System Configuration: Includes the installation of additional transmission-voltage circuit breakers to provide enhanced isolation capabilities and reconfiguration of substations to minimize customer impacts to events.
- Other: Includes miscellaneous items.

The table below details the reliability programs, and the associated assets to be replaced, in 2019. The table also identifies the number of assets remaining in each reliability program that have currently been identified for replacement following the planned 2019 work. The programs for 2020 and beyond are under development.

Targeted Number of Assets to Be Renewed by Type

Number of Assets Targeted for Renewal by Type		
Asset Management Programs	2019	Remaining
Substation - Distribution Equipment		
Circuit Breaker Replacements	14	111
Relay Improvements	5	16
Transformer Replacements	1	17
Animal Mitigation	3	
Remote Terminal Unit (RTU) Replacements		12
Switch Replacements	126	999
Transformer Life Extension	1	0
Substation Insulator Replacements		40
Surge Arrester Replacements	1	13
Substation – Transmission Equipment		
Circuit Breaker Replacements	1	8
Relay Improvements		11
Remote Terminal Unit (RTU) Replacements	1	3
Switch Replacements		9
Instrument Transformers		61
Substation Insulator Replacements		2,000

In addition, ENO conducts day-to-day routine maintenance and outage restoration activities, commonly referred to as operations and maintenance (O&M). The table below summarizes ENO's forecasted O&M spending, which includes the activities described in the "Maintenance Plan" section above as well as additional dollars to support the planning and execution of those maintenance programs and activities.

Forecasted Transmission Asset Management O&M Spending (2019-2023)
($ millions)

Spending Category	2019E	2020E	2021E	2022E	2023E
Transmission Asset Management O&M	1.64	1.63	1.62	1.62	1.62

IV. Conclusion

ENO is committed to improving the reliability of the distribution and transmission system that serves New Orleans and has presented herein a reasonable plan for addressing that improvement in system reliability. As noted herein, the Transmission Organization is currently evaluating additional funding needs for asset renewal programs and system configuration projects to achieve sustained levels of improved reliability and intends to come back to the Council with additional information when those plans are more fully developed. ENO will continue to work with the Council and its Advisors to provide detailed information about its efforts and the results of those efforts in 2019 and beyond.

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CERTIFICATE OF SERVICE
Docket No. UD-17-04

I hereby certify that I have served the required number of copies of the foregoing report upon all other known parties of this proceeding, by the following: electronic mail, facsimile, overnight mail, hand delivery, and/or United States Postal Service, postage prepaid.

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New Orleans, Louisiana, this 18th day of January 2019.

Timothy S. Cragin

Timothy S. Cragin

Exhibit 1
2019 FOCUS Device List (Q1, 2)

ITEM	AM	CPRAC #	Network	Substation	Feeder #	Device Type	Device ID	CI avoided	Insp Form Estimate
FOCUS	FC19N001	TU19-005T	Tulane	Market	2147	SBKR	2147	3482	$ 124,383
FOCUS	FC19N002	TU19-006T	Tulane	Almonaster	614	RCLR	24010	2109	$ 259,521
FOCUS	FC19N003	TU19-018T	Tulane	Almonaster	614	RCLR	25741	801	$ 21,587
FOCUS	FC19N004	EO19-001T	East Orleans	Tricou	2347	SBKR	2347	482	$ 365,411
FOCUS	AD19N001	TU19-014T	Tulane	Pauger	1704	LFUS	F24555	263	TBD
FOCUS	FC19N005	EO19-003T	East Orleans	Sherwood Forest	1601	RCLR	85894	221	TBD
FOCUS	FC19N006	TU19-015T	Tulane	Almonaster	614	LFUS	23527	151	TBD
FOCUS	FC19N007	EO19-004T	East Orleans	Sherwood Forest	1601	LFUS	27876	105	TBD
FOCUS	FC19N008	TU19-016T	Tulane	Joliet	2016	LFUS	33243	96	TBD
FOCUS	FC19N009	TU19-017T	Tulane	Joliet	2013	LFUS	43482	57	TBD

Exhibit 2
2019 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers					# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
					0	1	2	3	4						
1	Metro	Orleans	PAUGER	1705	0	1	0	0	0	3992	73	99%	1%	14465	3.67
2	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0715	0	1	5	5	23	3705	82	81%	19%	1846	0.49
3	Metro	Orleans	MARKET	2132	0	0	0	0	0	2703	56	98%	2%	8813	3.16
4	Metro	N.O. East	CURRAN	2212	0	1	0	2	0	2846	46	65%	35%	7386	2.58
5	Metro	N.O. East	ALMONASTER	623	0	0	0	0	0	3015	38	98%	2%	2939	0.94
6	Metro	N.O. East	CURRAN	2215	0	0	0	1	0	3123	46	65%	35%	1509	0.47
7	Metro	Orleans	ALMONASTER	615	0	0	0	0	0	2285	31	98%	2%	8916	3.72
8	Metro	Orleans	NAPOLEON	1915	0	0	0	0	0	2266	58	92%	8%	8668	4.73
9	ELI-Southeast (LA)	Algiers	LOWER COAST	W1726	0	1	0	3	7	2966	57	86%	14%	1849	0.62
10	Metro	Orleans	MARKET	2135	0	2	0	0	0	2727	47	67%	33%	3577	1.31
11	ELI-Southeast (LA)	Algiers	LOWER COAST	W1712	0	0	0	1	21	3064	61	46%	54%	203	0.06
12	Metro	Orleans	JOLIET	2026	0	0	0	0	0	2497	44	92%	8%	4112	1.56
13	Metro	Orleans	MARKET	2147	0	2	0	0	1	2795	48	95%	5%	1137	0.40
14	Metro	Orleans	DERBIGNY	1513	0	0	1	1	0	1956	46	98%	2%	8672	4.24
15	Metro	N.O. East	TRICOU	2347	0	0	0	1	0	2075	37	96%	4%	6771	3.15
16	ELI-Southeast (LA)	Algiers	LOWER COAST	W1714	0	2	0	5	2	2731	73	54%	46%	644	0.23
17	Metro	Orleans	PAUGER	1703	0	1	0	1	0	2078	46	85%	15%	198	0.09
18	Metro	Orleans	NAPOLEON	1926	0	1	0	0	0	978	25	100%	0%	1641	1.67
19	Metro	Orleans	JOLIET	2012	0	2	1	1	0	2351	71	96%	4%	3736	1.55

2020 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers 0	1	2	3	4	# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
20	Metro	Orleans	MIDTOWN	912	0	1	0	0	0	2412	22	95%	5%	#N/A[1]	#N/A
21	Metro	Orleans	ALMONASTER	614	0	0	0	0	0	2274	28	97%	3%	3520	1.51
22	Metro	N.O. East	GULF OUTLET	1205	1	0	0	1	0	2549	22	60%	40%	429	0.16
23	Metro	Orleans	PAUGER	1704	0	1	0	0	0	1600	43	91%	9%	8778	4.62
24	Metro	Orleans	JOLIET	2013	0	0	0	0	0	2277	40	95%	5%	2581	1.12
25	Metro	Orleans	NAPOLEON	1924	0	1	0	0	0	2426	38	95%	5%	837	0.33
26	Metro	Orleans	JOLIET	2011	0	1	0	0	0	2038	48	98%	2%	3813	1.83
27	Metro	Orleans	NAPOLEON	1916	0	0	0	0	0	1863	29	91%	9%	4890	2.56
28	Metro	N.O. East	CURRAN	2216	0	0	0	0	0	1535	4	10%	90%	7672	4.63
29	Metro	Orleans	JOLIET	2014	0	0	0	0	0	2183	32	96%	4%	1604	0.71
30	Metro	Orleans	SOUTHPORT	B0527	0	0	0	1	0	2211	78	98%	2%	1267	0.54
31	Metro	Orleans	PAUGER	1709	0	1	0	0	0	2033	22	97%	3%	2672	1.25
32	ELI-Southeast (LA)	Algiers	LOWER COAST	W1713	0	0	0	2	7	2405	60	74%	26%	3533	1.36
33	ELI-Southeast (LA)	Algiers	LOWER COAST	W1725	0	0	3	0	13	2489	58	82%	18%	2205	0.84
34	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0725	0	1	0	5	21	2290	57	63%	37%	3986	1.66
35	Metro	Orleans	JOLIET	2016	0	0	0	1	0	2065	35	82%	18%	2331	1.09
36	Metro	Orleans	NAPOLEON	1925	0	0	0	0	0	2241	37	96%	4%	245	0.11
37	Metro	N.O. East	TRICOU	2346	0	0	1	2	0	2064	53	99%	1%	1660	0.77
38	Metro	Orleans	JOLIET	2027	0	0	0	0	0	2204	75	97%	3%	263	0.11

[1] Midtown Feeder 912 is a new breaker and part of the reconfiguration plan.

2021 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers					# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
					0	1	2	3	4						
39	Metro	Orleans	MIDTOWN	911	1	0	0	1	0	1991	10	98%	2%	2158	1.07
40	Metro	N.O. East	ALMONASTER	613	0	0	0	0	0	1677	45	98%	2%	4426	2.53
41	Metro	N.O. East	SHERWOOD FOREST	1607	0	0	1	3	1	1858	50	95%	5%	2535	1.32
42	Metro	N.O. East	ALMONASTER	611	0	0	3	1	1	2049	44	97%	3%	470	0.22
43	ELI-Southeast (LA)	Algiers	Gretna	W0115	0	0	0	0	4	1845	28	95%	5%	2223	0.80
44	Metro	Orleans	MARKET	2146	0	0	0	0	0	1820	25	98%	2%	2175	1.15
45	Metro	Orleans	PAUGER	1712	0	1	0	1	0	1708	30	87%	13%	2933	1.61
46	Metro	N.O. East	PAUGER	1710	0	0	0	0	0	1965	33	98%	2%	411	0.20
47	Metro	Orleans	NAPOLEON	1917	0	1	0	1	0	1646	45	96%	4%	2849	1.69
48	Metro	Orleans	NAPOLEON	1922	0	1	1	0	0	1732	27	98%	2%	1529	0.85
49	Metro	Orleans	NAPOLEON	1923	0	1	0	1	0	1795	30	96%	4%	506	0.28
50	Metro	Orleans	NAPOLEON	1921	0	0	0	0	0	1747	29	96%	4%	720	0.41
51	Metro	Orleans	NAPOLEON	1914	0	0	0	0	0	1591	23	95%	5%	2001	1.21
52	ELI-Southeast (LA)	Algiers	Gretna	W0118	0	0	0	0	4	1272	30	95%	5%	4688	2.60
53	Metro	N.O. East	ALMONASTER	627	0	0	0	1	0	1747	28	98%	2%	300	0.16
54	Metro	N.O. East	SHERWOOD FOREST	1610	0	0	0	0	0	1019	15	25%	75%	6713	6.23
55	Metro	Orleans	NAPOLEON	1913	0	0	0	0	0	1607	25	91%	9%	1321	0.81
56	Metro	N.O. East	CURRAN	2217	0	0	0	2	0	1682	34	25%	75%	561	0.34
57	Metro	N.O. East	ALMONASTER	622	0	0	0	1	1	1630	44	99%	1%	888	0.51

2022 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers					# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
					0	1	2	3	4						
58	Metro	Orleans	DERBIGNY	1554	0	0	2	0	0	1381	36	96%	4%	2920	2.02
59	Metro	Orleans	MARKET	2137	0	0	1	0	0	1672	42	95%	5%	220	0.13
60	Metro	Orleans	JOLIET	2015	0	1	0	0	0	1548	20	97%	3%	908	0.56
61	Metro	N.O. East	PAUGER	1702	0	0	0	0	0	1500	42	98%	2%	1216	0.81
62	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0713	0	0	0	2	3	2059	10	92%	8%	2973	1.41
63	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0722	0	0	0	1	1	1725	14	91%	9%	201	0.12
64	Metro	N.O. East	SHERWOOD FOREST	1604	0	0	0	0	0	1385	38	89%	11%	2119	1.50
65	Metro	Orleans	PONTCHARTRAIN PARK	503	0	0	0	0	0	1385	32	78%	22%	1455	0.99
66	Metro	Orleans	PAUGER	1711	0	0	0	0	0	1384	50	88%	12%	1350	0.93
67	ELI-Southeast (LA)	Algiers	LOWER COAST	W1715	0	1	1	5	6	1488	125	53%	47%	325	0.22
68	Metro	Orleans	AVENUE C	409	0	0	0	1	0	1509	31	83%	17%	45	0.03
69	Metro	Orleans	MIDTOWN	907	1	1	0	1	0	859	39	97%	3%	5480	6.36
70	Metro	Orleans	NAPOLEON	1927	0	1	0	0	1	1313	32	82%	18%	1384	1.03
71	Metro	Orleans	MARKET	2142	0	0	0	0	0	1244	24	85%	15%	1800	1.42
72	Metro	N.O. East	SHERWOOD FOREST	1601	0	0	1	2	0	1220	36	80%	20%	1747	1.35
73	Metro	Orleans	JOLIET	2022	2	0	0	1	0	1381	32	95%	5%	109	0.07
74	Metro	N.O. East	CURRAN	2223	0	1	0	0	0	1188	37	46%	54%	1542	1.29
75	Metro	N.O. East	PATERSON	1010	0	0	1	4	2	1167	36	61%	39%	1398	1.13
76	Metro	Orleans	DERBIGNY	1553	1	0	0	1	0	1214	44	96%	4%	498	0.39

2023 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers					# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
					0	1	2	3	4						
77	ELI-Southeast (LA)	Westbank	Gretna	W0113	0	0	0	0	10	477	17	55%	45%	6815	2.43
78	Metro	Orleans	AVENUE C	407	2	0	0	0	0	1087	31	85%	15%	1104	0.98
79	ELI-Southeast (LA)	Algiers	Gretna	W0112	0	0	0	1	1	918	14	95%	5%	2536	2.15
80	Metro	Orleans	PONTCHARTRAIN PARK	512	0	0	0	0	0	1051	30	97%	3%	648	0.60
81	Metro	N.O. East	PONTCHARTRAIN PARK	506	0	0	0	0	0	1118	31	98%	2%	27	0.02
82	Metro	Orleans	AVENUE C	413	0	2	0	1	0	903	25	97%	3%	1908	2.09
83	Metro	N.O. East	SHERWOOD FOREST	1611	0	0	0	0	0	984	33	87%	13%	1092	1.07
84	Metro	Orleans	PONTCHARTRAIN PARK	510	1	0	0	0	0	1012	23	75%	25%	559	0.53
85	Metro	Orleans	JOLIET	2017	0	0	0	0	0	1007	41	87%	13%	477	0.46
86	Metro	Orleans	SOUTHPORT	B0526	0	1	0	1	0	755	66	67%	33%	2707	3.52
87	Metro	Orleans	AVENUE C	410	0	0	0	1	0	1030	25	99%	1%	215	0.20
88	Metro	N.O. East	SHERWOOD FOREST	1612	0	1	0	2	0	732	45	97%	3%	2665	3.50
89	Metro	Orleans	PAUGER	1708	0	0	1	0	0	945	19	92%	8%	601	0.63
90	Metro	N.O. East	ALMONASTER	621	0	0	0	0	1	994	35	95%	5%	144	0.14
91	ELI-Southeast (LA)	Westbank	Behrman	W0512	0	0	0	1	0	4	4	95%	5%	8931	3.59
92	Metro	N.O. East	PATERSON	1001	0	0	0	1	0	815	25	82%	18%	918	1.13
93	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0712	0	0	0	0	9	1240	39	66%	34%	616	0.51
94	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0723	0	0	0	0	3	1031	15	86%	14%	954	0.92
95	Metro	Orleans	NAPOLEON	1912	0	0	0	0	0	790	19	96%	4%	1022	1.27

2024 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers					# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
					0	1	2	3	4						
96	Metro	Orleans	AVENUE C	411	0	0	0	0	0	891	16	97%	3%	77	0.08
97	Metro	N.O. East	PATERSON	1009	0	0	0	0	0	829	26	75%	25%	570	0.67
98	Metro	N.O. East	GULF OUTLET	1204	0	1	0	1	1	713	63	85%	15%	1308	1.82
99	Metro	Orleans	AVENUE C	408	0	0	0	0	0	832	19	96%	4%	148	0.17
100	Metro	N.O. East	ALMONASTER	617	0	0	0	0	1	703	25	95%	5%	936	1.28
101	Metro	Orleans	AVENUE C	403	0	0	0	0	0	689	14	59%	41%	1041	1.49
102	Metro	N.O. East	PONTCHARTRAIN PARK	505	0	0	0	0	0	769	14	54%	46%	98	0.12
103	Metro	N.O. East	SHERWOOD FOREST	1605	0	0	0	2	0	425	14	35%	65%	3170	7.14
104	Metro	Orleans CBD	NOTRE DAME	1826	0	1	0	0	0	624	4	35%	65%	1253	1.99
105	Metro	Orleans	AVENUE C	406	0	0	0	0	0	745	14	68%	32%	51	0.07
106	Metro	N.O. East	ALMONASTER	626	0	0	0	1	1	712	47	63%	37%	77	0.10
107	Metro	N.O. East	PONTCHARTRAIN PARK	501	0	0	0	1	1	684	26	88%	12%	145	0.22
108	Metro	N.O. East	PONTCHARTRAIN PARK	502	0	0	0	0	0	622	20	98%	2%	660	1.02
109	Metro	Orleans	JOLIET	2021	0	0	0	0	0	579	11	98%	2%	678	0.58
110	Metro	N.O. East	PONTCHARTRAIN PARK	509	0	0	0	0	0	558	18	64%	36%	558	0.98
111	Metro	Orleans	NAPOLEON	1911	0	0	0	0	1	552	10	98%	2%	598	1.06
112	Metro	N.O. East	TRICOU	2345	0	0	1	4	1	582	35	88%	12%	310	0.51
113	Metro	Orleans	AVENUE C	401	0	0	0	0	0	560	4	26%	74%	388	0.68
114	Metro	Orleans	JOLIET	2025	0	0	5	0	0	495	35	99%	1%	966	1.98

2025 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers					# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
					0	1	2	3	4						
115	Metro	N.O. East	TRICOU	2325	0	0	1	0	0	572	33	98%	2%	82	0.13
116	Metro	Orleans	AVENUE C	405	1	0	0	0	0	499	18	94%	6%	489	0.95
117	Metro	Orleans	JOLIET	2024	1	0	0	0	0	526	14	91%	9%	143	0.26
118	Metro	N.O. East	ALMONASTER	612	0	1	0	1	1	112	12	95%	5%	3481	29.50[2]
119	Metro	Orleans	AVENUE C	402	0	1	0	0	0	476	3	38%	62%	52	0.11
120	Metro	N.O. East	PONTCHARTRAIN PARK	508	0	0	2	3	1	462	35	85%	15%	125	0.26
121	Metro	N.O. East	PATERSON	1002	1	0	0	4	3	328	21	88%	12%	430	1.28
122	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0726	0	0	0	0	9	863	14	85%	15%	642	0.74
123	ELI-Southeast (LA)	Algiers	HOLIDAY (LA)	W0714	0	1	0	1	2	701	25	42%	58%	171	0.31
124	Metro	Orleans	ALMONASTER	625	0	0	0	0	0	325	9	89%	11%	398	1.23
125	Metro	Orleans	AVENUE C	400	1	0	0	0	0	309	8	88%	12%	116	0.37
126	Metro	Orleans	DERBIGNY	1512	0	1	3	0	0	277	9	95%	5%	186	0.62
127	Metro	Orleans	SOUTHPORT	B0525	0	0	0	0	0	204	6	95%	5%	230	1.06
128	ELI-Southeast (LA)	Westbank	Behrman	W0524	0	0	0	1	2	158	11	95%	5%	551	1.02
129	Metro	N.O. East	ALMONASTER	616	0	0	0	1	2	168	23	84%	16%	169	1.01
130	ELI-Southeast (LA)	Westbank	Behrman	W0515	0	0	0	0	10	51	4	55%	45%	1004	0.42
131	Metro	Orleans	AVENUE C	412	1	0	0	0	0	134	3	69%	31%	19	0.14
132	Metro	Orleans	PONTCHARTRAIN PARK	513	0	0	0	0	0	98	10	85%	15%	99	0.99
133	Metro	N.O. East	GULF OUTLET	1202	0	1	0	0	0	95	13	99%	1%	89	0.93

[2] Almonaster 612 is currently switched abnormally due to a SELA project which causing a mis-calculated SAIFI. It will be switched back to normal after April 2019.

2026 FIN Overhead Inspection List

No.	REGION	LOCAL OFFICE	SUBSTATION	FEEDER	# of Priority Rank Customers					# of CUSTs	# of LFUS	% of OH	% of UG	2018 YTD CIs	2018 YTD SAIFI
					0	1	2	3	4						
134	Metro	Orleans	PAUGER	1701	0	0	0	0	0	76	4	87%	13%	87	1.10
135	Metro	Orleans	MIDTOWN	902	0	0	0	0	0	39	1	90%	10%	312	8.00
136	Metro	Orleans	PAUGER	1713	0	0	0	0	0	68	2	63%	38%	4	0.06
137	Metro	N.O. East	SHERWOOD FOREST	1608	0	0	0	1	0	41	9	96%	4%	187	4.56
138	Metro	N.O. East	GULF OUTLET	1203	0	0	2	3	0	57	27	93%	7%	8	0.14
139	Metro	Orleans CBD	DERBIGNY	1551	0	1	0	0	0	34	3	2%	98%	3	0.18
140	Metro	Orleans CBD	DERBIGNY	1543	0	2	0	0	0	31	4	7%	93%	1	0.03
141	Metro	Orleans CBD	DERBIGNY	1504	1	2	0	0	0	31	5	5%	95%	0	0.00
142	Metro	N.O. East	TRICOU	2326	0	0	0	0	1	30	11	98%	2%	0	0.00
143	Metro	Orleans	DERBIGNY	1510	0	0	0	0	0	22	12	7%	93%	26	1.13
144	Metro	Orleans	DERBIGNY	1506	0	0	1	0	0	21	6	70%	30%	0	0.00
145	Metro	Orleans	DERBIGNY	1511	0	1	0	0	0	14	3	98%	2%	0	0.00
146	Metro	N.O. East	PONTCHARTRAIN PARK	507	0	0	0	0	1	7	3	75%	25%	0	0.00
147	Metro	Orleans	DERBIGNY	1541	0	1	1	0	0	4	0	97%	3%	0	0.00
148	Metro	Orleans	MIDTOWN	910	0	0	0	0	0	1	0	1%	99%	6	0.00
149	Metro	Orleans	MIDTOWN	906	0	0	0	0	0	1	0	1%	99%	0	0.00
150	Metro	Orleans	MIDTOWN	908	0	0	0	0	0	1	0	1%	99%	0	0.00
151	Metro	Orleans	AVENUE C	404	0	0	0	0	0	0[3]	0			0	0.00

[3] Avenue C 404 is a new breaker from Storm Hardening and needs to be switched into the new configuration.

Exhibit 3

Fix-It-Now (FIN) Inspection Program Details

FIN inspections are focused on preventing imminent or other near-term outages. Under the view, we are looking for two categories of issues:

Imminent failure: Equipment projected to fail in less than six months

Priority-1 (P-1): Equipment projected to fail from 6 months to 5 years

Issues identified as imminent failure will be directed to the ENO FIN crew to work as soon as possible. Those identified as P-1 will be sent to engineering to be designed and constructed by the contract crews within a designated timeframe.

FIN Inspection Criteria triggering the need for Point repair:

- Condition of Cross-arms:
  - Broken, bowing, split cross-arms
  - Pin insulator is bent over (indicating rotten arm)
  - Broken or rotten brace
  - Broken Wilson rack – replace with standoff bracket or spools (does not trigger full R1)
- Condition of Insulator:
  - Flashed, broken, cracked, glazing missing
- Bayonet condition:
  - Bowing
  - Type of bracket holding shield wire
  - Indication of rot
- Line arrestor (on feeder)
- Automatic sleeves (will be sent to FIN crew for imminent repair, will not trigger R1)
- Steel arms with bare jumpers (track, but will not trigger R1)
- Infrared inspection of all connection points (switches, jumpers, etc)

Not in scope (those items not in accordance with ENO standards but less likely to cause an outage):

- Lack of Hendrix ground
- Lack of proper guy strain insulator
- Missing pole ground
- Corner box pole in acceptable condition

When an imminent failure or P-1 issue is identified, we will address all issues on the pole bringing it our R1 standard. This includes:

- Repairing all damaged cross-arms
- Installing Hendrix ground to improve lightning mitigation

- Replacing damaged insulators
- Replacing damaged bayonet if pole is in acceptable condition or replacing pole as needed
- Installing animal mitigation

The following personnel support the FIN Inspection Program:

FIN 4-man crew:

- Repairs needed from infrared inspections
- Imminent failure work from inspections
- Any P-1 type work from inspections
- Repairs from repeat outage inspections

Infrared Tech:

- Infrared all substations yearly
- Infrared all exit cables from substation to OH or get-aways
- Infrared vaults (CBD)/switchgears (east)
- Infrared yearly feeders identified
- Infrared problem feeders identified during the year

Reliability Service Man:

- Inspect all feeders and line fuses identified each year
- Support infrared tech
- Inspect network issues for bi-weekly reliability meeting
- Support FIN crew

Engineering Support:

- Device coordination studies on yearly circuits. Ensure relay coordination between underground and reclosers
- Design support for inspections
- Infrared support

Two 5-man contract construction crews:

- Construction of all P1 design work for yearly inspections

Exhibit 4
Sectionalization Candidate List

Feeder ID	Device ID	Facility Type	Customers Directly on Device	Line Miles Directly on Device	Customers in Reclosing Zone	Line Miles in Reclosing Zone	Customer Count w/ Largest Downstream Device Removed	Line Miles w/ Largest Downstream Device Removed	Forecasted Annual Outage Rate	CI Avoided by Sectionalization	$/CI Avoided by Sectionalization
623	25706	Rec	994	4.75	2088	8.8	1914	8.13	1.190476	621.4286	$ 80.46
1712	1712	Feeder	327	8.05	729	11.41	638	11.15	2.47619	451.2857	$ 110.79
B0527	25151	Rec	247	1.57	981	4.29	861	4.1	1.666667	408.75	$ 122.32
W0713	W0713	Feeder	111	5.15	1128	10.22	1644	13.3	1.285714	362.5714	$ 137.90
2147	2147	Feeder	381	3	1318	7.16	1318	7.16	1.095238	360.881	$ 138.55
1914	25172	Rec	315	1.95	1296	6	1081	5.3	1.047619	339.4286	$ 147.31
614	24010	Rec	342	2.94	1353	6.43	1353	6.43	1	338.25	$ 147.82
1554	1554	Feeder	301	5.12	594	7.42	594	7.42	2.142857	318.2143	$ 157.13
2135	2135	Feeder	748	4.89	2714	9.67	2241	8.42	0.428571	290.7857	$ 171.95
1913	1913	Feeder	809	4.91	1564	7.35	1328	6.73	0.714286	279.2857	$ 179.03
626	626	Feeder	13	3.9	661	14.68	573	14.06	1.619048	267.5476	$ 186.88
503	503	Feeder	311	5.49	1100	11.95	1042	11.66	0.952381	261.9048	$ 190.91
2347	58662	Rec	221	4.67	634	6.71	546	6.44	1.571429	249.0714	$ 200.75
2022	2022	Feeder	525	5.02	1200	9.62	1084	9.02	0.809524	242.8571	$ 205.88
2146	2146	Feeder	586	3.28	1691	6.32	1523	5.67	0.571429	241.5714	$ 206.98
1554	24153	Rec	288	2.39	809	4.58	724	4.31	1.190476	240.7738	$ 207.66
1926	24783	Rec	214	2.79	872	6.96	603	4.51	1.047619	228.381	$ 218.93
1925	1925	Feeder	372	3.46	1286	7.41	1286	7.41	0.666667	214.3333	$ 233.28
2024	2024	Feeder	239	5.07	519	6.25	368	6.15	1.47619	191.5357	$ 261.05
1708	1708	Feeder	255	3.86	940	8.27	777	7.27	0.809524	190.2381	$ 262.83
614	25741	Rec	138	1.06	591	3.3	476	2.9	1.285714	189.9643	$ 263.21
625	625	Feeder	112	4.83	300	7.05	147	6.14	2.428571	182.1429	$ 274.51
1704	1704	Feeder	123	2.71	587	5.87	587	5.87	1.238095	181.6905	$ 275.19
2346	24618	Rec	126	1.75	999	8.57	892	7.95	0.714286	178.3929	$ 280.28
1607	35340	Rec	57	2.04	1047	10.85	623	6.72	0.666667	174.5	$ 286.53
2346	2346	Feeder	198	4.56	761	11.22	761	11.22	0.904762	172.131	$ 290.48
2137	2137	Feeder	459	3.75	1583	6.87	1345	6.76	0.428571	169.6071	$ 294.80
B0526	B0526	Feeder	217	6.14	669	8.6	549	8.52	1	167.25	$ 298.95
W1725	W1725	Feeder	359	7.03	1078	12.96	1532	17.57	0.571429	154	$ 324.68
1911	1911	Feeder	366	4.29	702	6.13	618	5.82	0.857143	150.4286	$ 332.38
1917	1917	Feeder	364	3.05	895	5.75	895	5.75	0.666667	149.1667	$ 335.20
2014	2014	Feeder	314	3.38	1012	5.66	1012	5.66	0.571429	144.5714	$ 345.85
1001	1001	Feeder	68	4.29	744	10.03	628	9.38	0.761905	141.7143	$ 352.82
1010	39982	Rec	190	3.58	366	5.1	293	4.71	1.52381	139.4286	$ 358.61

Feeder ID	Device ID	Facility Type	Customers Directly on Device	Line Miles Directly on Device	Customers in Reclosing Zone	Line Miles in Reclosing Zone	Customer Count w/ Largest Downstream Device Removed	Line Miles w/ Largest Downstream Device Removed	Forecasted Annual Outage Rate	CI Avoided by Sectionalization	$/CI Avoided by Sectionalization
1702	1702	Feeder	305	4.13	617	7.03	617	7.03	0.857143	132.2143	$ 378.17
408	408	Feeder	127	2.65	670	6	594	6.08	0.761905	127.619	$ 391.79
509	509	Feeder	96	4.24	505	8.75	301	6.62	0.952381	120.2381	$ 415.84
1917	24486	Rec	169	1.42	801	5.3	598	3.86	0.571429	114.4286	$ 436.95
512	512	Feeder	156	5.96	858	11.19	735	10.62	0.52381	112.3571	$ 445.01
502	502	Feeder	205	3.11	524	5.13	447	4.71	0.857143	112.2857	$ 445.29
1703	58023	Rec	98	1.06	1159	6.37	949	4.83	0.380952	110.381	$ 452.98
1702	37681	Rec	82	1.21	770	4.54	634	3.79	0.571429	110	$ 454.55
2016	2016	Feeder	356	3.75	836	6.37	836	6.37	0.52381	109.4762	$ 456.72
1002	1002	Feeder	169	6.8	279	8.77	228	8.75	1.238095	86.35714	$ 578.99
623	623	Feeder	217	3.05	793	5.51	793	5.51	0.428571	84.96429	$ 588.48
W0723	W0723	Feeder	133	1.93	644	5.44	518	4.65	0.52381	84.33333	$ 592.89
1709	23983	Rec	134	1.07	1143	5.21	926	4.34	0.285714	81.64286	$ 612.42
409	409	Feeder	171	1.97	1331	7.16	791	4.92	0.238095	79.22619	$ 631.10
405	405	Feeder	236	3.41	440	4.53	401	4.28	0.714286	78.57143	$ 636.36
2345	2345	Feeder	116	4.53	492	9.22	395	8.59	0.571429	70.28571	$ 711.38
1922	1922	Feeder	287	3.04	1357	6.84	1211	6.48	0.190476	64.61905	$ 773.77
506	13917	Rec	136	2.14	579	6.03	489	5.26	0.428571	62.03571	$ 805.99
2026	25781	Rec	396	3.44	1577	8.95	1311	8.17	0.142857	56.32143	$ 887.76
410	410	Feeder	247	3.12	944	7.57	868	7.13	0.238095	56.19048	$ 889.83
2025	2025	Feeder	106	6.35	331	7.63	160	7.57	0.619048	51.22619	$ 976.06
616	616	Feeder	48	6.98	145	9.18	122	8.91	1.380952	50.05952	$ 998.81
1710	27011	Rec	127	1.05	1045	4.73	885	4.06	0.190476	49.7619	$ 1,004.78
1607	1607	Feeder	117	4.93	666	9.28	666	9.28	0.285714	47.57143	$ 1,051.05
1923	1923	Feeder	258	2.33	1879	8.13	1658	7.58	0.095238	44.7381	$ 1,117.62